ATOMIC ENERGY newsletter®

A SERVICE FOR INDUSTRY BUSINESS ENGINEERING AND RESEARCH
ROBERT M. SHERMAN, EDITOR. PUBLISHED BI-WEEKLY BY ATOMIC ENERGY NEWS CO., 1000 SIXTH AVENUE, NEW YORK 18, N. Y.

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Dear Sir:

New laboratory designed especially for studies of plutonium is being constructed at the nuclear research center outside Columbus, Ohio of Battelle Memorial Institute. A one story laboratory building, with 1440 square feet of space, will house the first U.S. privately financed facility for the study of plutonium. Research will be mainly on applications of plutonium as fuel in central station power reactors. Supporting services and facilities for the new laboratory will be provided by the research reactor, hot cells, and critical assembly laboratory at the nuclear center. (Other PRODUCT NEWS, p. 3 this LETTER.)

Contract for Phase III construction work on the plutonium fabrication pilot plant facilities at Hanford Works, Richland, Wash., has been awarded by the USAEC to George A. Grant, Inc., Richland. Grant's bid of $278,800 was lowest of five received. The work includes general construction operations as well as installation of major equipment including melting furnaces, blenders, mixers, X-ray apparatus and other devices of a specialized nature. (Other CONTRACT NEWS, p. 2 this LETTER.)

Additional containment will be provided for the nuclear reactor for the Piqua, Ohio, nuclear power plant, and a new alternate site will be used. USAEC decision to proceed with the plant had been delayed when hazards of original plans had been noted by its advisory committee on reactor safeguards. These original plans had located the reactor core and auxiliary equipment underground in a series of concrete vaults lined with steel. Spent fuel elements, when taken from the reactor for reprocessing were to be moved into an area above the reactor outside the vaults. In the redesign of the containment, provision will be made for handling the fuel elements within suitable containment. (Other BUSINESS NEWS, p. 2 this LETTER.)

Fourth Conference on Radioactive Isotopes in Agriculture is scheduled for April 2-3 at Oklahoma State University, Stillwater, Okla. Co-sponsorship is by Associated Midwest Universities, and Argonne National Laboratory, Lemont, Ill. Half-day sessions will hear papers from some thirty-five specialists from the U. S. and abroad, with reports covering radioiodine and thyroid function; radioisotopes in the study of genetic materials; ruminology; effects of radiation on genetic materials; and medical applications of radioisotopes. Detailed conference program may be obtained from John H. Roberson, executive director of Associated Midwestern Universities, Argonne National Laboratory, Lemont, Ill. (Other MEETINGS, COURSES, CONFERENCES, p. 5 this LETTER.)

The 10 MEV tandem accelerator sold by High Voltage Engineering Corp., Burlington, Mass., to Atomic Energy of Canada, Ltd., has now gone into operation at AECL's Chalk River, Ont., laboratories. The $1 million machine consists of two Van de Graaff accelerators placed end to end, horizontally, in a 25-ton steel pressure tank some 34-feet long by eight feet in diameter. The tank contains nitrogen at 225 lbs./sq. in. to insulate the accelerator. (Other RESEARCH NEWS, p. 4 this LETTER.)

ATOMIC ENERGY BUSINESS NEWS...

NEW MANUFACTURING PLANTS FOR NUCLEAR FIRMS:- New manufacturing plant and office is being constructed in Des Plaines, Ill., by Nuclear-Chicago Corp., producer of radioactivity measuring instruments, radiochemicals, and allied accessories. A new 55,000 square ft., one story building on a nine acre site will house all operations. Main building, 250 ft. by 200 ft., will have half occupied by the manufacturing and film badge divisions, with the other half containing main offices, library, technical division, and laboratories. Eight laboratories for developing and manufacturing radioactive chemicals, standards and sources will be in a temperature-controlled wing of 5,000 square ft. adjoining the main building by air-locks. The firm hopes to move to the new plant shortly after mid-year.

Manufacturing plant in Amersfoort, Holland, is planned by High Voltage Engineering Corp., Burlington, Mass., producer of Van de Graaff and electron linear accelerators. The company feels that with a manufacturing, sales and service operation in Amersfoort it will be better able to service the over 30 present installations it has made of its machines in nine European countries, Africa, and the Near East. It will also be able to enter directly into the European Common Market, since it will be offering European-made products. Present overseas sales are made directly from Burlington, Mass., with the assistance of overseas distributors. In its new set-up, it will retain its key distributors.

NEW DIVISION ESTABLISHED:- Special nuclear energy division has been set up by Allis-Chalmers Manufacturing Co., Milwaukee, Wisc. The new division will handle all company activities in the nuclear energy field.

NEW INDUSTRY GROUPS FORMED:- New industry group has been formed by Ford Instrument Co., division of Sperry-Rand Corp.; Maryland Shipbuilding & Drydock Co., and Isbrandtsen Co., the shipping line, to build a 32,700 deadweight ton nuclear-powered tanker. Plans of the group were revealed by C. S. Rockwell, president of Ford Instrument, in testimony last fortnight in Washington before the Joint Congressional Committee on Atomic Energy, holding hearings on the state of nuclear development in the U.S. (202 hearings). Mr. Rockwell said the tanker might cost $15 million, and could put to sea in 3½ years. The government would be expected to assist in financing the project, he noted. As planned, the reactor and power plant would be tested in a specially constructed floating hull section (bypassing prototype stage) and then inserted as the center section into a tanker which had been cut in half; Maryland Shipbuilding has been successfully enlarging tankers in recent years by this process, known as "jumboizing"..... New company, Rolls-Royce and Associates, has been formed by three British firms, Vickers, Rolls-Royce, and Foster-Wheeler, to design and build equipment for nuclear power production.

ATOMIC ENERGY CONTRACT NEWS...

BIDS ASKED:- Bids for nuclear devices to be used in university biology teaching have been asked by the USAEC's New York operations office (Alice Hodnett, chief, procurement branch), 70 Columbus Ave., New York, N.Y. The equipment comprises 400 combination scaler-counting ratemeters built to specifications, and 400 radiation biology accessory kits containing a simplified cloud chamber, a quartz fiber ionization chamber analysis unit, a spinthariscope, and radioautographic equipment. Bids on the radiation biology kits are due March 6th; bids on the ratemeters are due March 12th. Successful bidders will be required to make delivery of 196 kits and ratemeters by June 15th, with the balance by July 15th.

CONTRACTS AWARDED:- Contract has been awarded Controls for Radiation, Inc., Cambridge, Mass., by General Electric Co., to perform radiochemical analyses during the start-up of the recently-launched nuclear submarine Triton. The work under this contract, which will be done for Knolls Atomic Power Laboratory (operated by GE for USAEC) will be in laboratories at Groton, Conn., where the Triton's hull was built by Electric Boat division of General Dynamics Corp., and in the home laboratories of Controls for Radiation at Cambridge. These radiochemical analyses involve measurement and identification of radioactivity induced in the heat-transfer medium of the reactor propulsion systems; they are expected to supply useful information about the operating characteristics of the reactors.

Contract in amount of $248,528 has been awarded by Maritime Administration to Grumman Aircraft Engineering Corp., for design of a demonstration hydrofoil sea craft with a displacement of between 50 and 100 tons and a speed of 80 knots. Also in contract are feasibility studies of two hydrofoil ships in the 500-ton class, one suitable for nuclear propulsion.

NEW PRODUCTS, PROCESSES, SERVICES...for nuclear lab & plant...

NEW PRODUCTS FROM MANUFACTURERS:- Model SL-71 is new kit of radioactive isotopes prepared especially for training students in nuclear science. It consists of microcurie amounts of 14 long-lived isotopes, prepared in 5 ml liquid solution, and enclosed in ½-oz. glass containers. No USAEC license is needed to purchase either the entire kit or any individual isotope. --Atomic Accessories, Inc., 244-02 Jamaica Ave., Bellerose 26, N.Y.

Sediment density probe, capable of measuring sand, silt and sediment densities, has useful range of from 20 to 130-lbs./cu. ft. Probe, which operates on the principle that the amount of scattering and absorption of gamma rays in any medium is a function of the density of the medium, uses transistors in the circuitry of the preamplifier. --Technical Operations, Inc., Burlington, Mass.

New glass fiber paper for air filtration, said to be tested to filter at least 99.98% of a test aerosol of 0.25 micron diameter, has suggested uses in radiological aerosol determinations, safety surveys, etc. --Gelman Instrument Co., 233 Jefferson, Chelsea, Michigan.

Model 50-1 automatic spectrometer consists of a single channel pulse height analyzer, containing a non-overloading linear amplifier, a sweep count rate meter and high voltage supply plus Brown recorder. Automatic sample changer can be used to change samples when sweep circuit resets. The system may also be operated as a manual spectrometer. --Radiation Instrument Development Laboratory, Inc., 5737 So. Halstead St., Chicago 21, Ill.

PRODUCT NEWS:- Because of larger industrial demand, amount of krypton-85 which the USAEC will offer for sale to commercial users has been increased to 100,000 curies per year. Increasing use of krypton-85 for activating phosphors in self-luminous light sources, in thickness gauges, and in other applications has been responsible for pushing up demand. Current prices at which the USAEC sells krypton-85 are $50.00 for each of the first two curies, and $15.00 for each additional curie. The commission obtains it by extraction from reactor fuel element chemical processing plant off-gases.

Radioactive crystalline C-14-L-glutamine is now being offered by Schwarz Laboratories, Inc., Mt. Vernon, N.Y. The company has also reduced the price of its pure L-glutamine, which it offers under the trade-name of Glutad as tablets, capsules, and in pre-measured 2-gram envelopes. Information and bibliographies on this product are in Schwarz's bulletin no. 144 available on request to the company at 230 Washington St.

MANUFACTURERS' NEWS:- Fabrication of a pressurizer for Belgium's first large-scale nuclear power station has been completed by Alco Products, Inc., Schenectady, N.Y. The 19-ton vessel, built at Alco's Dunkirk, N.Y., plant on sub-contract from the atomic power department of Westinghouse Electric, and clad with stainless steel, is for the 11,500 kw pressurized water reactor to be used in the plant of Centre d'Etude de l'Energie Nucleire at Mol, some forty miles from Brussels.

Berkshire Chemicals, Inc., chemical jobbing house, owned by Vitro Corp. of America, will now handle on an exclusive basis the rare earths, thorium, and other compounds produced by Heavy Minerals Co., Chattanooga, Tenn. Heavy Minerals is also a component company of Vitro Corp., which has an 87½% interest in it.

Sales office in Atlanta, Ga., recently opened there by Tracerlab, Inc., Waltham, Mass., nuclear products firm, gives the company sales and service coverage in the southeast U.S. Clifford N. Chancey will work out of this office as southeast nuclear applications engineer.

Two year USAEC license has been issued Coastwise Marine Disposal Co., 5216 S. Van Ness, Los Angeles, Calif., to dump radioactive waste material in the Pacific Ocean. The firm intends to collect low-level waste material, and "package" it for disposal at a facility in Long Beach, Calif. Dumping will be done beyond the continental shelf, about 150-miles southwest of Point Arguella, Calif., in about 2,000 fathoms. (Last fortnight some 48 steel drums containing radioactive waste encased in concrete were dumped in the Atlantic about 1,300 miles east of New York by the U. S. Navy's cargo ship Golden Eagle. The waste, loaded on at Bremerhaven, had come from activities of the U. S. Army in Germany.)

MANUFACTURERS' LITERATURE:- New 76-page catalogue of radioactivity measuring instruments is now available from Nuclear-Chicago Corp., 229 W. Erie St., Chicago, Ill. More than 125 products of this firm for detecting, counting and recording radioactivity are listed.

IN RESEARCH & EDUCATIONAL FIELDS...nuclear developments...

NEW REACTOR IN OPERATION:- The USAEC's transient reactor test facility achieved criticality last fortnight. Located at the Commission's reactor testing station, Arco, Idaho, the facility was constructed under a $357,900 contract by Teller Construction Co., Portland, Oregon. Overall costs were $1 million. Argonne National Laboratory people are operating the reactor which can deliver a high intensity, short duration surge of nuclear energy without damage to the facility itself. The surge will simulate abnormal reactor operating conditions, and will enable reactor designers to observe on a small scale the effect of such conditions on prototype fuel elements planned for fast reactors.

LOW POWER RESEARCH REACTOR PLANNED:- New low-power research reactor is planned for Windscale, which is being expanded as one of England's national centers for the development of gas cooled reactors. The new reactor, to be known as HERO, derives its name from its description: hot experimental reactor of zero power. Costs will be about £1½ million. It will be built near the advanced gas cooled reactor (A.G.R.) on which work has already started. Function of the new reactor will be to complement the work of the A.G.R. by making it possible to carry out low radiation level measurements and to experiment with several alternative arrangements of fuel for best results. It is the intention of the U.K. Atomic Energy Authority that from about 1965 onwards reactors for nuclear power stations will be based on the A.G.R. which uses uranium oxide fuel sealed into beryllium cans instead of the present power reactor practice of using magnesium cans.

NEW NUCLEAR ENERGY PROJECT SET-UP:- Six European countries, together with Euratom, will now combine in a joint investigation of the use of high temperature gas-cooled reactors for nuclear power stations and other applications. This is the third jointly-run international project in the program of the O.E.E.C.'s European nuclear energy agency for the development of commercial nuclear power. The new project, known as Dragon, will be based mainly on the construction of an experimental power-producing reactor of several megawatt capacity at the U. K. Atomic Energy Authority's research establishment at Winfrith Heath, Dorset. Cost of the five year program of research and experiment is estimated at about £13.6 million, £10 million of which will be provided by Switzerland, Sweden, Norway, Denmark, Austria, Euratom, and the U.K., acting jointly. The excess £3.6 million will be borne by the U.K. which will retain ownership of the reactor and the installations in England at the conclusion of the Dragon project.

EDUCATIONAL GRANTS MADE:- Grant of $80,000 has been made by USAEC to the University of California for laboratory equipment and instrumentation to be used in industrial radioisotope training courses. It is the first such grant made under the USAEC's new program of assistance to colleges and universities for training in radioisotope principles and technology.

National Science Foundation has granted $750,000 to Georgia Institute of Technology, Atlanta, to assist in financing a research reactor facility. Private sources will furnish some half-million additional; and $2.5 million will come from State of Georgia. Emory University, and University of Georgia will also use the facility.

BOOKS & OTHER PUBLICATIONS...

Study and Development of Nuclear Batteries. Philip E. Ohmart. Report of Ohmart Corp.'s, contract work with Wright Air Development Command. No. PB-125-203. (Microfilm, $6.30; Photostat, $19.80.) .....Nuclear Batteries. John H. Coleman, Jerome Goodman. Studies conducted by Radiation Research Corp., during 1955, 1956. No. PB-135-277. (Microfilm $3.00; Photostat, $6.30.) --Library of Congress, Wash. 25, D.C.

NOTES:- Some eleven papers presented at recent symposium on nuclear energy and the law are covered in the December, 1958, Vanderbilt Law Review; a bibliography is also included in this issue.

Atomic Energy Law Journal is a new quarterly for attorneys and others in the atomic energy field. Publisher is Warren Publications, Inc., 89 Beach St., Boston, 11, Mass.; annual subscription rate is $20 a year.

Preliminary reports for 1958 on uranium (no. MMS-2849), beryllium (no. MMS-2846), and phosphate rock (no. MMS-2848), so far as their domestic production in the U.S. is concerned, are available on request from the Publications Section, U. S. Bureau of Mines, Pittsburgh, Pa.

ATOMIC ENERGY PATENT DIGEST...

ISSUED February 17, 1959 to PRIVATE ORGANIZATIONS AND/OR INDIVIDUALS:- (1) Ionization recording capsules. Walter H. Barkas, inventor. No. 2,974,299 issued to inventor of record. (2) Well logging apparatus. John T. Dewan, inventor. No. 2,874,301 assigned to Schlumberger Well Surveying Corp., Houston, Texas. (3) Ionization chamber. Roland M. Lichtenstein, inventor. No. 2,874,304 assigned to General Electric Co.

ISSUED February 17, 1959 to GOVERNMENTAL ORGANIZATIONS:- (1) Method of testing hermetic containers. L. B. Borst, inventor. No. 2,873,603 assigned to USAEC. (2) Canned slugs. Milton Burton, inventor. No. 2,873,853 assigned to USAEC. (3) Oxidation of transuranic elements. R. L. Moore, inventor. No. 2,874,025 assigned to USAEC. (4) Process of preparing a fluoride of tetravalent uranium. E. J. Wheelwright, inventor. No. 2,874,026 assigned to USAEC. (5) Homogeneous nuclear reactor. R. P. Hammond, H. M. Busey, inventors. No. 2,874,106 assigned to USAEC. (6) Device for treating materials. L. A. Ohlinger, F. Seitz, G. J. Young, inventors. No. 2,874,107 assigned to USAEC. (7) Test-hole construction for a neutronic reactor. L. A. Ohlinger, F. Seitz, G. J. Young, inventors. No. 2,874,108 assigned to USAEC. (8) Means for terminating nuclear reactions. C. M. Cooper, inventor. No. 2,874,109 assigned to USAEC. (9) Ultra-stabilized D.C. Amplifier. E. C. Hartwig, R. W. Kuenning, R. C. Acker, inventors. No. 2,874,235 assigned to USAEC. (10) Mass separators. F. Oppenheimer, J. W. Bell, inventors. No. 2,874,295 assigned to USAEC. (11) Calutron ion source. E. J. Lofgren, inventor. No. 2,874,296 assigned to USAEC. (12) Radiation integrator. H. N. Wilson, inventor. No. 2,874,305 assigned to USAEC. (13) Measuring apparatus. T. P. Kohman, B. B. Weissbourd, inventors. No. 2,874,306 assigned to USAEC. (14) Reactor shield. E. P. Wigner, L. A. Ohlinger, G. J. Young, A. M. Weinberg, inventors. No. 2,874,307 assigned to USAEC. (15) Linear accelerator. N. C. Christofilos, I. J. Polk, inventors. No. 2,874,326 assigned to USAEC.

ISSUED February 24, 1959 to PRIVATE ORGANIZATIONS AND/OR INDIVIDUALS:- (1) Protection system. J. J. Grinerich, inventor. No. 2,875,344 assigned to General Electric Co., New York. (2) Radiation detector. G. Herzog, inventor. No. 2,875,364 assigned to The Texas Co., New York, N.Y.

ISSUED February 24, 1959 to GOVERNMENTAL ORGANIZATIONS:- (1) Separation of uranium and plutonium values and fission products by chlorination. H. S. Brown, G. T. Seaborg, inventors. No. 2,875,021 assigned to USAEC. (2) Forming plutonium-bearing carrier precipitates and washing them. B. F. Faris, inventor. No. 2,875,022 assigned to USAEC. (3) Process of recovering uranium from its ores. P. Galvanek, Jr., inventor. No. 2,875,023 assigned to USAEC. (4) Separating barium values from uranyl nitrate solutions. E. R. Tompkins, inventor. No. 2,875,024 assigned to USAEC. (5) Forming plutonium salts from plutonium oxalates. C. S. Garner, inventor. No. 2,875,025 assigned to USAEC. (6) Separating plutonium from contaminating elements. R. B. Duffield, inventor. No. 2,875,026 assigned to USAEC. (7) Method of making alloys of beryllium with plutonium and the like. O. J. C. Runnalls, inventor. No. 2,875,041 assigned to USAEC. (8) Push-pull power reactor. D. K. Froman, inventor. No. 2,875,143 assigned to USAEC. (9) Detector for telephone wire-tap device. E. D. Hightower, inventor. No. 2,875,285 assigned to USAEC. (10) Calutron ion source. W. M. Brobeck, inventor. No. 2,875,339 assigned to USAEC. (11) Personnel dosimeter. R. D. Birkhoff, H. H. Hubbell, inventors. No. 2,875,343 assigned to USAEC. (12) Method and apparatus for handling radioactive products. D. Nicoll, inventor. No. 2,875,345 assigned to USAEC. (13) Overall optical viewer. G. S. Monk, inventor. No. 2,875,346 assigned to USAEC.

MEETINGS, COURSES, CONFERENCES...

MEETINGS:- Sixth annual meeting of Society of Nuclear Medicine is scheduled for June 19-20, in Chicago. Full program may be obtained from S. N. Turiel, Soc. of Nuclear Medicine, 750 N. Michigan Ave., Chicago 11, Ill.

Thermonuclear research for power, and sessions on nuclear power plants are on the agenda of the twenty-first annual American Power Conference to be held March 31-April 2 in Chicago. Full program may be obtained from R. A. Budenholzer, prof. of mechanical engineering, Ill., Institute of Technology, 25 W. 33rd St., Chicago 16, Ill.

Sincerely,

The Staff,
ATOMIC ENERGY NEWSLETTER

March 3rd, 1959